

WHAT IS CLAIMED IS:

1. A device for providing information about a physical and/or environmental
5 condition, comprising:
a sensor physically associated with a user for detecting predetermined
environmental hazards; and
means associated with the sensor for notifying the user or a third party of the
detection of the environmental hazard exceeding a predefined limit.
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2. The device of claim 1, wherein the device comprises a wristband.
3. The device of claim 1, wherein the device comprises a tag attached to the
user.
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4. The device of claim 1, wherein the device comprises a patch attached to
the user.
- 20 5. The device of claim 1, wherein the sensor is adapted to detect at least
one of: predetermined chemicals, predetermined biological organisms, and radiation.
6. The device of claim 1, wherein the device is assigned a unique
identification.
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7. The device of claim 1, wherein the notifying means comprises an alarm
for notifying the user of the detected environmental hazard.
8. The device of claim 7, wherein the alarm comprises a visual alarm.

9. The device of claim 7, wherein the alarm is operably connected to an electronic circuit that communicates with the sensor.

5 10. The device of claim 9, wherein the alarm comprises an audible alarm.

11. The device of claim 1, including means for conveying information obtained from the sensor to a third party.

10 12. The device of claim 11, wherein the conveying means comprises a transmitter.

13. The device of claim 12, wherein the transmitter comprises a radio frequency transmitter.

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14. The device of claim 12, wherein the device is assigned a unique identification and wherein the transmitter is adapted to convey information obtained from the sensor and the unique identification to a third party.

20 15. The device of claim 1, including a second sensor adapted to detect physical conditions of the user.

16. The device of claim 15, wherein the physical conditions comprise biological or chemical changes of the user.

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17. The device of claim 16, wherein the second sensor is adapted to detect at least one of: blood pressure, heart rate, temperature, oxygen level, glucose level, skin condition, blood chemistry, protein levels, carbohydrate levels, lipid levels, or genetic material levels or changes of the user.

18. The device of claim 15, wherein the notifying means comprises an audible or visual alarm operably connected to an electronic circuit that communicates with the second sensor for notifying the user of the detected environmental hazard.

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19. The device of claim 15, including means for conveying information obtained from the second sensor to a third party.

20. The device of claim 19, wherein the conveying means comprises a
10 transmitter.

21. The device of claim 20, wherein the transmitter comprises a radio frequency transmitter.

15 22. The device of claim 20, wherein the device is assigned a unique identification and wherein the transmitter is adapted to convey information obtained from the sensor and the unique identification to a third party.

23. The device of claim 1, wherein the device is removably attached to the
20 user.

24. The device of claim 1, wherein the notifying means includes an electronic circuit adapted to communicate with a receiver not physically associated with the device.

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25. The device of claim 24, wherein the electronic circuitry includes data storage means.

26. A device having a unique identification and adapted to provide

information about a physical and/or environmental condition, the device comprising:

a sensor physically associated with a user for detecting predetermined environmental hazards;

means associated with the sensor for notifying the user or a third party of the
5 detection of the environmental hazard exceeding a predefined limit;

means for conveying the unique identification of the device and information obtained from the sensor to the third party.

27. The device of claim 26, wherein the device comprises a wristband,
10 patch or a tag attached to the user.

28. The device of claim 26, wherein the sensor is adapted to detect at least one of: predetermined chemicals, predetermined biological organisms, and radiation.

15 29. The device of claim 26, wherein the notifying means comprises an alarm for notifying the user of the detected environmental hazard.

30. The device of claim 29, wherein the alarm comprises a visual alarm or an audible alarm.

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31. The device of claim 30, wherein the alarm is operably connected to an electronic circuit that communicates with the sensor.

32. The device of claim 26, wherein the conveying means comprises a
25 transmitter.

33. The device of claim 32, wherein the transmitter comprises a radio frequency transmitter.

34. The device of claim 26, including a second sensor adapted to detect a physical condition as a biological or chemical change in the user.

35. The device of claim 34, wherein the physical condition detected
5 includes at least one of: blood pressure, heart rate, temperature, oxygen level, glucose level, skin condition, blood chemistry alteration, lipid alteration, protein alteration, carbohydrate alteration, and genetic material alteration.

36. The device of claim 34, wherein the notifying means comprises an
10 audible or visual alarm operably connected to an electronic circuit that communicates with the second sensor for notifying the user of the detected environmental hazard.

37. The device of claim 34, including means for conveying information
obtained from the second sensor to a third party.

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38. The device of claim 37, wherein the conveying means comprises a transmitter.

39. The device of claim 38, wherein the transmitter comprises a radio
20 frequency transmitter.

40. The device of claim 39, wherein the device is assigned a unique
identification and wherein the transmitter is adapted to convey information obtained
from the sensor and the unique identification to a third party.

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41. The device of claim 26, wherein the device is removably attached to the user or an article of clothing of the user.

42. The device of claim 26, wherein the notifying means includes an

electronic circuit adapted to communicate with a receiver not physically associated with the device.

43. The device of claim 42, wherein the electronic circuitry includes data
5 storage means.

44. A system for providing information about a physical condition and/or environmental hazard, comprising:

a device adapted to be worn by a user and assigned a unique identification;
10 a sensor physically associated with the device for detecting the physical condition and/or environmental hazard;
a remote receiver adapted to communicate with the device;
means for conveying the unique identification of the device and information obtained from the sensor to the remote receiver; and
15 means associated with the sensor for notifying the user or the remote receiver of the detection of the environmental and/or physical hazard exceeding a predefined limit.

45. The system of claim 44, wherein the device comprises a wristband,
20 patch or a tag attached to the user or an article of clothing of the user.

46. The system of claim 44, wherein the sensor is adapted to detect at least one of: predetermined chemicals, predetermined biological organisms, and radiation.

25 47. The system of claim 44, wherein the notifying means comprises a visual or audible alarm for notifying the user or a third party of the detected environmental or physical hazard.

48. The system of claim 47, wherein the alarm is operably connected to an

electronic circuit that communicates with the sensor.

49. The system of claim 44, wherein the conveying means comprises an electronic circuit including a transmitter.

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50. The system of claim 49, wherein the transmitter comprises a radio frequency transmitter.

51. The system of claim 44, wherein the device includes a second sensor
10 adapted to detect a physical condition of the user including biological or chemical changes of the user, including at least one of: blood pressure, heart rate, temperature, oxygen level, glucose level, skin condition of the user, and alterations of blood chemistry, lipids, proteins, carbohydrates or genetic material.

15 52. The system of claim 51, wherein the notifying means comprises a visual or audible alarm for notifying the user or a third party of the detected environmental or physical hazard.

53. The system of claim 52, wherein the alarm is operably connected to an
20 electronic circuit that communicates with the first and second sensors.

54. The system of claim 51, wherein the conveying means comprises an electronic circuit including a transmitter in communication with the second sensor.

25 55. The system of claim 54, wherein the transmitter comprises a radio frequency transmitter.

56. A system for providing information about a physical condition and/or environmental hazard, comprising:

a device adapted to be worn by a user and assigned a unique identification;
a sensor physically associated with the device for detecting the physical condition or environmental hazard;

a remote receiver adapted to communicate with the device;

5 an electronic circuit operably connected to the sensor and having a transmitter for conveying the unique identification of the device and information obtained from the sensor to the remote receiver; and

an alarm for notifying the user or the remote receiver of the detection of an environmental or physical hazard exceeding a predefined limit.

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57. The system of claim 56, wherein the device comprises a wristband, patch or a tag attached to the user or an article of clothing of the user.

58. The system of claim 56, wherein the sensor is adapted to detect at least
15 one of: predetermined chemicals, predetermined biological organisms, and radiation.

59. The system of claim 56, wherein the alarm comprises a visual alarm for notifying the user or a third party of the detected environmental hazard.

20 60. The system of claim 56, wherein the alarm comprises an audible alarm operably connected to the electronic circuit.

61. The system of claim 56, wherein the transmitter comprises a radio frequency transmitter.

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62. The system of claim 56, wherein the device includes a second sensor adapted to detect a physical condition of the user in the form of biological or chemical changes in the user, including at least one of: blood pressure, heart rate, temperature, oxygen level, glucose level, skin condition of the user, and alterations of blood

chemistry, protein, carbohydrate, lipid, or genetic material.

63. The system of claim 62, wherein the notifying means comprises a visual or audible alarm for notifying the user or a third party of the detected environmental or physical hazard.

64. The system of claim 63, wherein the alarm is operably connected to an electronic circuit that communicates with the first and second sensors.

65. The system of claim 62, wherein the conveying means comprises an electronic circuit including a transmitter in communication with the second sensor.

66. The system of claim 65, wherein the transmitter comprises a radio frequency transmitter.

67. A method for monitoring physical and/or environmental conditions of users in a potentially hazardous environment, comprising the steps of:

assigning each user a device having a unique identification;

logging each identification into a database;

detecting a predetermined hazard using a sensor of one or more of the devices;

conveying the unique identification and sensor information from the one or more devices to a receiver;

identifying the one or more devices detecting the predetermined hazard; and

notifying the one or more users of the identified devices of the detection of the hazard.

68. The method of claim 67, including the step of determining if the detected hazard exceeds a predefined limit.

69. The method of claim 67, including the step of attaching a device to each user.

5 70. The method of claim 69, wherein the device comprises a wristband, patch or tag attachable to the user or an article of clothing of the user.

71. The method of claim 67, wherein the detecting step comprises the step of detecting an environmental hazard.

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72. The method of claim 71, wherein the sensor is adapted to detect at least one of: predetermined chemicals, predetermined biological organisms, and radiation.

73. The method of claim 67, wherein the detecting step comprises the step
15 of detecting a user physical condition hazard.

74. The method of claim 73, wherein the detecting step comprises the step of detecting at least one of: blood pressure, heart rate, temperature, oxygen level, glucose level, skin condition, and alterations of blood chemistry, carbohydrates, lipids,
20 proteins, or genetic material of each user.

75. The method of claim 67; wherein the conveying step includes the step of transmitting the unique identification and sensor information from the one or more devices to the receiver.

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76. The method of claim 75, including the step of using a radio frequency transmitter to transmit the unique identification and sensor information from the one or more devices to the receiver.

77. The method of claim 67, wherein the notifying step includes the step of activating an alarm to notify the one or more users of the detection of the hazard exceeding a predefined limit.

5 78. The method of claim 77, including the step of continuously monitoring the user in real time to create control data prior to detecting an abnormal physical condition.

79. A method for monitoring physical and/or environmental conditions of
10 users in a potentially hazardous environment, comprising the steps of:

 attaching a device to each user, the device having a unique pre-assigned identification;

 logging each identification into a database;

 detecting a predetermined hazard using a sensor of one or more of the
15 devices;

 transmitting the unique identification and sensor information from the one or more devices to a receiver;

 identifying the one or more devices detecting the predetermined hazard;

 determining if the detected hazard exceeds a predefined limit;

20 notifying the one or more users of the identified devices of the detection of the hazard exceeding the predefined limit.

80. The method of claim 79, wherein the device comprises a wristband, patch or tag attachable to the user or an article of clothing of the user.

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81. The method of claim 79, wherein the detecting step comprises the step of detecting an environmental hazard.

82. The method of claim 81, wherein the sensor is adapted to detect at least

one of: predetermined chemicals, predetermined biological organisms, and radiation.

83. The method of claim 79, wherein the detecting step comprises the step of detecting a user physical condition hazard.

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84. The method of claim 83, wherein the detecting step comprises the step of detecting the alteration of at least one of: blood pressure, heart rate, temperature, oxygen level, glucose level, skin condition, lipid levels, protein levels, carbohydrate levels, and genetic material of each user.

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85. The method of claim 79, including the step of using a radio frequency transmitter to transmit the unique identification and sensor information from the one or more devices to the receiver.

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86. The method of claim 79, wherein the notifying step includes the step of activating an alarm to notify the one or more users of the detection of the hazard exceeding the predefined limit.

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87. The method of claim 86, including the step of continuously monitoring the user in real time to create control data prior to detecting an abnormal physical condition.